

**Anti-EGFR (Clone: 2.1E1)**  
**Mouse monoclonal antibody**  
**Reference: AP10540; AP10540C**



1 of 2

**INTENDED USE AND PRESENTATION:**

For *in vitro* diagnostic use.

**AP10540, 7 ml.** Prediluted antibodies in a synthetic organic linear polymer buffer solution (pH 7.4), with carrier protein and preservative for stabilisation "READY TO USE"

**AP10540C, 1 ml.** Concentrated antibodies with carrier protein and preservative for stabilisation.

**SUMMARY, EXPLANATION AND LIMITATIONS:**

Epidermal Growth Factor Receptors (EGFR) are transmembrane glycoproteins expressed by various cell types. The known EGFR-proteins (EGFR1, 2, 3, and 4 or HER1, 2, 3, and 4) are highly homologous proteins. They belong to the receptor tyrosine kinase superfamily and are involved in signal perception and transduction. To fulfil this function they build homo- and heterodimers with each other. Usually EGFR1 is referred to as EGFR, whereas EGFR2 is referred to as Her2. Correspondingly, EGFR3 and EGFR4 are also called HER3 and HER4, respectively. The antibody of clone 2-1E1 recognises the human EGFR1, in the following referred to as EGFR. EGFR is highly overexpressed by a variety of human tumours such as breast and lung carcinomas, colon carcinomas and in tumours of the brain. In the light of new therapeutic options with small molecules and therapeutic antibodies, immunohistochemical detection of EGFR-overexpression has gained increasing importance over the last years.

Immunohistochemistry (IHC) is a complex technique in which immunological and histological detection methods are combined. In general, the manipulation and processing of tissues before immunostaining, especially different types of tissue fixation and embedding, as well as the nature of the tissues themselves may cause inconsistent results (Nadji and Morales, 1983). Endogenous pseudoperoxidase and peroxidase activity or endogenous biotin and alkaline phosphatase activity can cause non-specific staining results depending on the detection system used. Tissues that contain Hepatitis B surface antigen (HBsAg) can produce false positives when using HRP detection systems (Omata et al, 1980). Insufficient contrast staining and/or improper mounting of the sample may influence the interpretation of results.

**Isotype:** IgG1

**Immunogen:** Purified human EGFR.

**Staining pattern:** Cytoplasmic membrane.

The interpretation of the stain results is the full responsibility of the user. Any experimental result must be confirmed by a medically established diagnostic product or procedure.

**Positive control:** A431 cells, skin, placenta or squamous cell carcinoma.

**External negative control:** Tissue sample homologous to the test sample incubated with an antibody isotype not specific for EGFR.

**APPLICATIONS:**

This antibody is designed for the specific localization of

human EGFR using IHC techniques in formalin-fixed, paraffin-embedded tissue sections.

EGFR may be overexpressed in breast tumors, brain, bladder, lung, stomach, head and neck, esophagus, cervix, vulva, ovary and endometrium. It is found predominantly in squamous cell carcinomas. It is expressed in a high percentage of squamous cell carcinoma metastases in different locations and therefore its expression has been considered as an indicator of poor prognosis in these neoplasms.

In light of new therapeutic options with small molecules and therapeutic antibodies for immunohistochemical detection of EGFR overexpression has been gaining importance in recent years.

**PRODUCT COMPOSITION:**

Mouse immunoglobulin IgG1, clone 2.1E1, obtained from ascites fluid. The preparation contains saline buffer, stabilising and carriers proteins, and sodium azide as a preservative.

**METHODS AND PROCEDURE:**

**Principles of the procedure:** The demonstrations of antigens by IHC is a sequential procedure with several steps involving first the application of a specific antibody for the antigen of interest (primary antibody), then a secondary antibody which joins to the first, an enzyme complex, and the addition of a chromogenic substrate. The sample is washed between each step. Enzymatic activation of the chromogenic substrate creates a visible product where the antigen is located. The results are interpreted using a light microscope. The primary antibody can be used both in manual IHC and with automated immunostainers.

**Specimen:** Paraffin-embedded tissue samples should be used. The antibody is also useful for immunostaining frozen tissue samples. Western blot techniques are not recommended.

**Staining procedure:**

<b>Antigen retrieval</b>	Pronase (10 min. at 37°C) or Proteinase K (10 min. at RT)
<b>Working dilution</b> (only for concentrates)	1:200 – 1:300
<b>Incubation</b>	30 min; RT
<b>Control Tissue</b>	A431 cells, skin, placenta or squamous cell carcinoma

**Amplification and development of the immunostaining:**

Follow standard procedure and the recommendations given by the manufacturer for the materials used. In the case of using automated immunostainers, use the specified buffers and materials for each instrument.

See our web site at [www.genova-europe.com](http://www.genova-europe.com) for detailed protocols ancillary reagents and support products.

**REQUIRED MATERIALS BUT NOT SUPPLIED:**

All reagents, materials, and laboratory equipment for IHC procedures are not provided with this antibody. This includes adhesive slides and cover slips, positive and negative control tissues, Xylene or adequate substitute, ethanol, distilled H<sub>2</sub>O,



Catalog number



Batch code



In Vitro diagnostic medical device



Temperature limitation



Expiration date



Manufacturer



See instruction for use



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heat pretreatment equipment (pressure cooker, steamer, microwave), pipettes, Coplin jars, glass jars, moist chamber, histological baths, negative control reagents, counter-staining solution, mounting materials, and microscope.

Buffered solutions for antigen retrieval, enzyme treatments, highly sensitive detection systems, and other auxiliary reagents are available from Genova Scientific.

**STORAGE AND STABILITY:**

Store at 2-8 °C until the expiration date printed on product label. Do not use after the expiration date. If fresh solutions are required, these must be prepared immediately prior to use, and will be stable for at least one day at room temperature (20-25°C). Unused portion of antibody preparation should be discarded after one day. If the product is stored under different conditions from those stipulated in these technical indications, the new conditions must be verified by the user. The validity period of the ready to use products when opened, is the same as the expiration date indicated on the label of intact product.

Genova Scientific guarantees that the product will maintain all of the described characteristics from the production date until the expiration date, as long as the product is stored and used as recommended. No other guarantees are provided. Under no circumstances is Genova Scientific obliged to cover damages caused by use of this reagent.

**TROUBLESHOOTING:**

If unusual staining is observed or any other deviations from the expected results, please read these instructions carefully, along with the instructions from the detection system. If this does not solve the problem, please contact Genova Scientific's technical support department or your local distributor.

**PRECAUTIONS:**

Use only by qualified personnel.

Use proper protective equipment in order to avoid contact with reagents and samples in the eyes, skin, and mucosal tissues. In case of contact with sensitive areas, immediately flush the affected area with water. Avoid microbial contamination of the reagent, as this may produce nonspecific staining results. This antibody contains sodium azide (NaN<sub>3</sub>), used as a stabilising agent, which is not considered to be a hazardous material in the concentration used. Concentration of sodium azide in drainage pipes made of lead or copper can cause the formation of highly explosive metallic azides. In order to avoid this, sodium azide must be disposed of along with a large volume of running water. Material safety data sheet (MSDS) for pure sodium azide is available upon request.

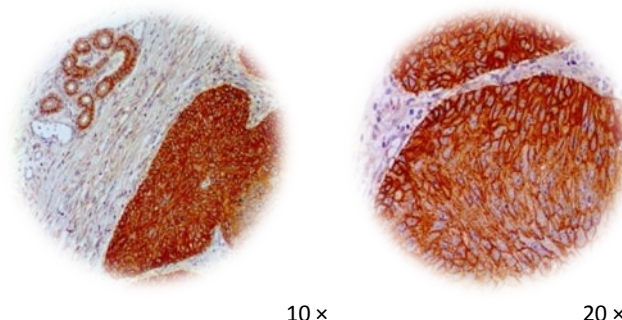
**PERFORMANCE CHARACTERISTICS:**

Genova Scientific has performed studies to evaluate the functioning of these antibodies for use with standard detection systems, concluding that the product is both

specific and sensitive for the antigen of interest.

**BIBLIOGRAPHY:**

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IHC of EGFR (clone 2.1E1) on FFPE squamous cell carcinoma tissue.

Pronase; DAB; Hematoxylin



Catalog number



Batch code



In Vitro diagnostic medical device



Temperature limitation



Expiration date



Manufacturer



See instruction for use



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